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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,774	10/13/2000	Akio Katsube	018976-181	8104

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EXAMINER	
COMPTON, ERIC B	
ART UNIT	PAPER NUMBER
3726	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/689,774	KATSUBE ET AL.	
	Examiner	Art Unit	
	Eric B. Compton	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,9-14 and 18* is/are pending in the application.

4a) Of the above claim(s) *1-4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7 and 9-14* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-4 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 29, 2002.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-022795 to Kazuhiko et al (SHIN ESTU CHEM CO) in view of JP 11-045912 to MATSUSHITA.

Kazuhiko et al disclose a method for manufacturing electronic components, comprising: holding a substrate (3) on a surface of a holding jig (1,2) made of an elastic material (1), in which at least the surface of the elastic material is adhesive, by the strength of the surface; and mounting and electrically connecting an element (see section [0020] of the machine translation]) on the substrate while surface is held on the surface of the elastic material.

However, they do not specifically disclose how the electronic components are mounted on the substrate.

MATSUSHITA discloses a method an apparatus for bonding electronic components to substrate. The electronic components are bump bonded to the substrate using ultrasonic waves. The process allows the component to be conductively bonding very firmly (Derwent English Abstract).

Regarding claim 7, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al by a bump bonding process using ultrasonic waves, in light of the teachings of MATSUSHITA, in order to manufacture electronic components using conventional bonding apparatus known in the art to firmly bond the component to the substrate.

4. Claims 9, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/MATSUSHITA in view of US patent 4,098,945 to Oehmke.

Kazuhiko et al/ MATSUSHITA disclose the invention cited above. Kazuhiko et al do note that the rubber layer may be of the hardening type. English Translation, [0008]. However, they do not explicitly disclose that the elastic material has a harness of at least A30.

Oehmke discloses a conductive adhesive elastic material comprising an elastic binder for "peelable adhesive fastening of metallic materials without interruption of the electrical conductive pathways between them" (col. 7, lines 62-64). It is disclosed that the conductive material may preferably comprise silicone rubber (see col. 6, lines 38-43). Furthermore, it is noted that the "binder should be capable of providing a soft composition having a Shore A hardness of less than about 40" (col 6., lines 34-36). It is

also pointed out that a Shore A harness of greater than 40 is too hard for most applications (cols. 1-2, lines 66-1).

Regarding claim 9, it would have been obvious to one having ordinary skill in the art at the time of invention, to have provided the elastic of Kazuhiko/ MATSUSHITA with a rubber having a hardness of at least A30, in light of the teachings of Oehmke, in order to provide an adhesive having a requisite conformability, moldability, and flexibility (col 2, lines 21+).

Regarding claim 10, Applicant, Kazuhiko, and Oehmke all disclose a silicone rubber composition. Applicant notes these composition are stable at 250 °C. Kazuhiko et al do note that the rubber layer has a thermal resistance. English Translation, [0026]. Therefore, it is inherent that this composition is stable at this temperature also. "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 11, in Kazuhiko the step of holding is carried out using a jig having a laminate structure comprising: a hard material (2) and the elastic material (1).

Regarding claim 12, in Kazuhiko and Oehmke the elastic material is an adhesive silicone rubber layer.

Regarding claim 14, MATSUSHITA discloses bump bonding the component to a substrate.

5. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/ MATSUSITA/Oehmke in view of Applicant's Admitted Prior Art (AAPA).

Kazuhiko et al/MATSUSITA/Oehmke disclose the invention cited above. However, they do not specifically disclose how the electronic components are mounted on the substrate.

AAPA notes as on prior art on page 1, lines 22+, of the specification that wire bonding is a known bonding technique using an automated process.

Regarding claim 13, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al/MATSUSITA/Oehmke by a wire bonding process, in light of the teachings of AAPA, in order to manufacture electronic components using conventional bonding apparatus known in the art.

Allowable Subject Matter

6. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest the invention as claimed in claim 7 and further, in particular, that "ultrasonic waves are applied while the substrate is held on the surface of the elastic material" [of the holding jig].

8. Applicant notes an additional benefit to applying ultrasonic waves to the substrate when the substrate is held of the surface of the elastic material. *See*

Specification, page 17, line 18-22 ("Regarding the bonding energy produced by the ultrasonic waves, the absorption of the bonding energy is suppressed by making the rubber hardness of the elastic material 2 a rubber hardness degree of 30 or more, and in the same way as in the wire bonding shown in Fig. 11, a bonding strength equal to that in the case where a conventional metal tray is used can be obtained."

Response to Arguments

Applicant's arguments filed June 29, 2007, have been fully considered but they are not persuasive.

Applicant is directed to the allowable subject matter indicated above.

Applicant argues that "Nothing in Arikado et al. shows, teaches or suggests a) bonding the elements mounted on a holding jig made of an elastic material as claimed in claim 7." Response, pages 7-8. However, it is only in (new) claim 18, that such a step is positively recited.

Applicant suggests "A combination of Kazuhiko et al. and Arikado et al. would merely suggest to mount the electronic pad on the flexible printed circuit board and subsequently tear the substrate and electronic pad off the fixture as taught by Kazuhiko et al. and then to mount the FPC substrate to the movable table 35 of Arikado et al. and to ultrasonically bond it to a flip chip 30 as taught by Arikado et al." Response, page 8. However, claim 7 does not preclude this sequence event, since the bonding is not expressly claimed to occur while the substrate is mounted on the holding jig as in claim

18. Again as noted above in paragraph 8, the sequence of claim 18 provides new and unexpected results over the conventional ultrasonic bonding not performed using the holding jig as claimed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

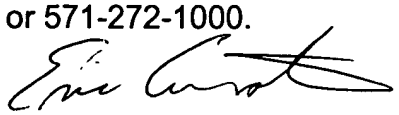
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eric B. Compton
Primary Examiner
Art Unit 3726

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